



# Simeon Tran

[simeonat.github.io](https://simeonat.github.io) | [SimeonAT](#) | [simeon-tran](#)

## Education

### University of California, Santa Cruz

M.S. IN COMPUTER SCIENCE AND ENGINEERING

B.S. IN COMPUTER SCIENCE

*Santa Cruz, California*

*Sept. 2023 - Dec. 2025*

*Jul. 2019 - Jun. 2023*

## Master's Thesis

### Comparative Study of Encryption Algorithms in Battery Powered Thread® Networks for Smart Homes

*Jan. 2024 - Dec. 2025*

[HTTPS://SIMEONAT.GITHUB.IO/RESEARCH/THESIS](https://simeonat.github.io/research/thesis)

- Removed encryption algorithm used in OpenThread (AES) and replaced it with the ASCON encryption algorithms
- Forked ESP-IDF source code to allow 802.15.4 compatible ESP32 devices to run my OpenThread ASCON fork
- Showed that network performance and battery lifetime *not* significantly impacted

## Experience

### Sphinox Inc.

*Jun. 2022 - PRESENT*

FULL STACK WEB DEVELOPER & NETWORK ADMINISTRATOR

- Developer and maintainer for Next.js CRM web application to manage barber shop rewards program containing thousands of customer data
- Responsible for securing network infrastructure by setting up VLANs and Tailscale ACLs, managing UniFi network devices, and maintaining backups on company servers
- Responsible for hosting services on company servers, including internal password manager, deployment of barber shop CRM, along with Prometheus and Grafana for network monitoring

### Tech4Good Lab

*Jun. 2023 - Dec. 2023*

LEAD RESEARCH ASSISTANT

*Santa Cruz, California*

- Oversaw the development of an Express.js and OpenAPI server that used ChatGPT to create personalized learning curricula
- Helped team members write unit tests to check the functionality of the prototype back-end server
- Conducted interview studies to explore how ChatGPT can be used to automate the creation of personalized learning pathways
- Developed the initial UI/UX flowchart for a web application used to design personalized learning experiences

WEB DEVELOPER TEAM LEAD

*Apr. 2023 - Jun. 2023*

- Used Ionic and Capacitor to create infrastructure to allow all existing Angular projects to run as iOS and Android apps
- Implemented Google OAuth login on iOS and Android using the Codetrix Capacitor Plugin
- Wrote detailed documentation and onboarding instructions for new members to get them acquainted with Ionic

## Skills

**Embedded Systems** ESP-IDF, OpenThread, nRF Connect, Analog Discovery 3

**Networks** TCP/IP, Wireshark, Prometheus, Grafana, UniFi

**Web Frameworks** Node.js, Deno, Next.js, Astro

**Front-end** React, Angular

**Databases** PostgreSQL, Firebase

**Back-end** OpenAPI, GraphQL, Express.js

**CI/CD** Docker, GitHub Actions

**Programming** C/C++, Python, Typescript/Javascript, Haskell

**Soft Skills** Teamwork, Leadership, Tutoring, Mentoring

**Languages** English, Vietnamese

## Projects

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### Daily Time Manager Web Application

Sept. 2022 - Dec. 2022

[HTTPS://GITHUB.COM/SIMEONAT/BAGEL.IO/TREE/MAIN](https://github.com/SIMEONAT/BAGEL.IO/TREE/MAIN)

- Worked with four fellow software engineering classmates to create a web app that generates visualizations based on completed tasks on a user's to-do list
- Designed the UI for the task cards and to-do list
- Developed both the React front-end and Node.js back-end implementations for the login and register pages

### Fractal Terrain Generation Program for Python Course

Apr. 2020

[HTTPS://USERS.SOE.UCSC.EDU/~PANG/30/S20/PROG1/TERRAIN\\_SIMEON.TXT](https://users.soe.ucsc.edu/~pang/30/s20/PROG1/TERRAIN_SIMEON.TXT)

- Used Python Turtle Module and starter code provided by the class TA to create program that recursively generates random terrain
- Developed extra features beyond what was asked, which encouraged graders and course faculty to label this program as a “star solution” on course website (<https://users.soe.ucsc.edu/~pang/30/s20/>)

### Video Game Demo using Python and PyGame

Dec. 2020 - Dec. 2021

[HTTPS://GITHUB.COM/SIMEONAT/SPACEVIEWERPYGAME](https://github.com/SIMEONAT/SPACEVIEWERPYGAME)

- Created single-player game demo where players interact with objects in outer space
- Implemented RPG-style text dialogue using object-oriented programming
- Applied knowledge of data structures by creating a binary tree to store RPG text-box objects
- Integrated pixel art sprites with Python code to create lively animations

## Teaching

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### Baskin Engineering at UCSC

Jun. 2024 - Jul. 2024

FULL STACK WEB DEVELOPMENT TEACHING ASSISTANT

Remote

- Held daily office hours where I helped students with debugging
- Taught students web development using React, Express, and PostgreSQL
- Helped students develop the habit of Test Driven Development (TDD)

### UC Santa Cruz Learning Support Services

Sep. 2020 - Jun. 2021

PYTHON COURSE TUTOR

Remote

- Held weekly remote tutoring sessions with diverse students for Introduction to Python course
- Assisted students on Python concepts and basic object-oriented programming to help them perform well on assignments and exams
- Demonstrated knowledge of Python by creating programming examples and activities

### UC Santa Cruz Academic Excellence Program

Oct. 2021 - Dec. 2021

PRECALCULUS TUTOR

Remote

- Was a tutor/mentor for Professor Morales-Almazan's Precalculus class, under the recommendation of the professor himself
- Helped students with Precalculus topics that they struggled with, allowing them to be better prepared for the homework and exams
- Gave freshman students from different backgrounds advice on how to navigate the university, in addition to assisting them with math